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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/708,645	03/17/2004	Terry B. J. Kuo	22171-00014-US	2644

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EXAMINER
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COX, CASSANDRA F

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 05/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/708,645		KUO ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Cassandra Cox		2816	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 13-15 is/are rejected.
- 7) ☒ Claim(s) 5-12 and 16 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-4 and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Arai et al. (U.S. Patent No. 4,956,730).

In reference to claim 1, Arai discloses in Figure 7 a pulse interval to voltage converter (901), comprising: a delay unit (929) for delaying an input pulse signal (b); a counter (927) connected to the delay unit (929), wherein the count of the counter is reset to zero when the counter receives the input pulse signal (C); a latch (930) for locking the count of the counter (927) before the counter is reset; and a digital-to-analog converter (931) for converting the count of the latch (930) into an analog signal (932).

The same applies to claims 13 and 14.

In reference to claim 2, Arai discloses in Figure 7 a frequency regulator (933) for regulating a clock frequency of a clock generator (921).

In reference to claim 3, Arai discloses in Figure 7 a clock generator (921) for generating clock signals.

In reference to claim 4, Arai discloses in Figure 7 wherein the frequency regulator (933) is a frequency divider. The same applies to claim 15.

2. Claims 1, 3, and 13-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Kimura et al. (U.S. Patent No. 4,532,561).

In reference to claim 1, Kimura discloses in Figure 16 a pulse interval to voltage converter (8), comprising: a delay unit (31) for delaying an input pulse signal (e); a

counter (35) connected to the delay unit (31), wherein the count of the counter is reset to zero when the counter receives the input pulse signal (j); a latch (36) for locking the count of the counter (35) before the counter is reset; and a digital-to-analog converter (37) for converting the count of the latch (36) into an analog signal (k). The same applies to claims 13 and 14.

In reference to claim 3, Kimura discloses in Figure 16 a clock generator (38) for generating clock signals.

***Allowable Subject Matter***

3. Claims 5-12 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. The following is a statement of reasons for the indication of allowable subject matter: Claim 5 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(a) wherein the circuit further comprises a synchronization unit (32) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 6 and 13 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(a) wherein the circuit further comprises an underflow protection circuit (39) in combination with the rest of the limitations of the base claims and any intervening claims. Claim 7 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(a) wherein the circuit further comprises an overflow protection circuit (38) in combination with the rest of the limitations of the base claims and any intervening

claims. Claim 8 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(a) wherein the circuit further comprises a conditioning unit (31) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 9 and 10 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(d) wherein the delay unit comprises two counters (40102) and a NOR gate (7402) in combination with the rest of the limitations of the base claims and any intervening claims. Claims 11 and 12 would be allowable because the closest prior art of record fails to disclose a circuit as shown in Figure 3(f) wherein the frequency divider comprises two counters (40102), a NOR gate (7402), and an inverter (7404) in combination with the rest of the limitations of the base claims and any intervening claims.

### ***Conclusion***

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

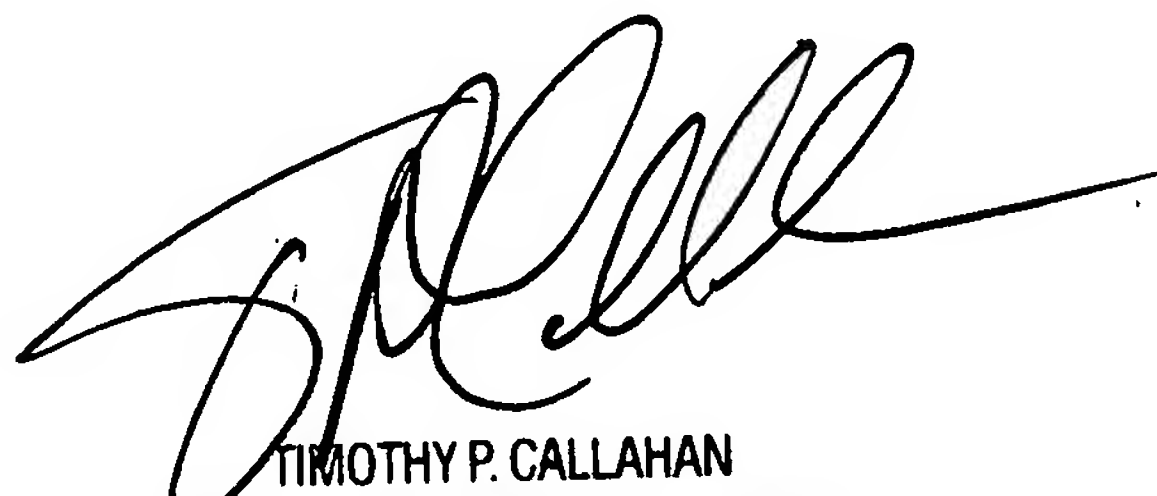
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cassandra Cox whose telephone number is 571-272-1741. The examiner can normally be reached on Monday-Thursday from 7:00 AM to 4:30 PM and on alternate Fridays from 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Callahan can be reached on 571-272-1740. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CC  
CC

April 22, 2005



TIMOTHY P. CALLAHAN  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800